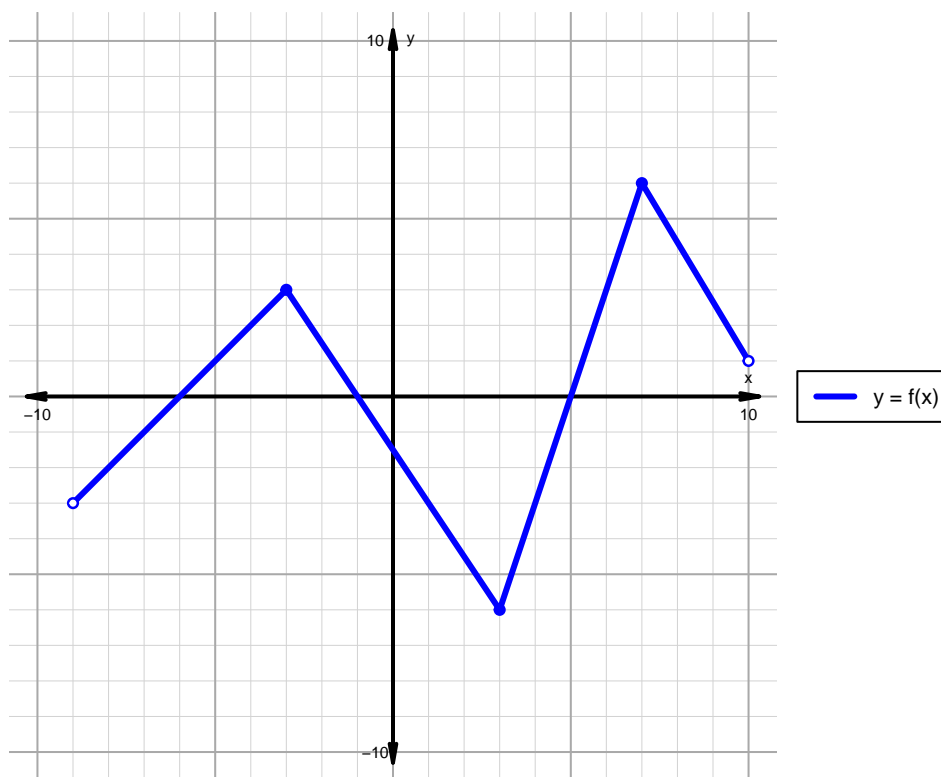


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 17)**

1. The function  $f$  is graphed below.

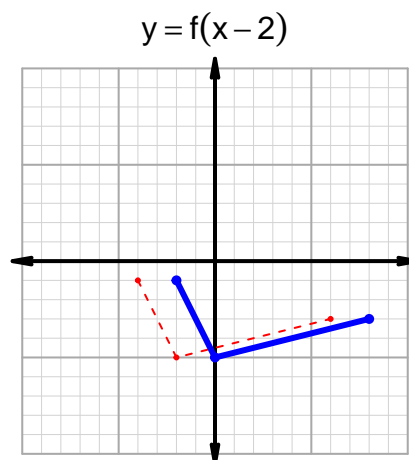
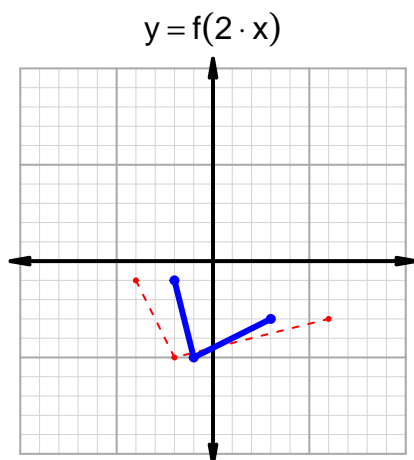
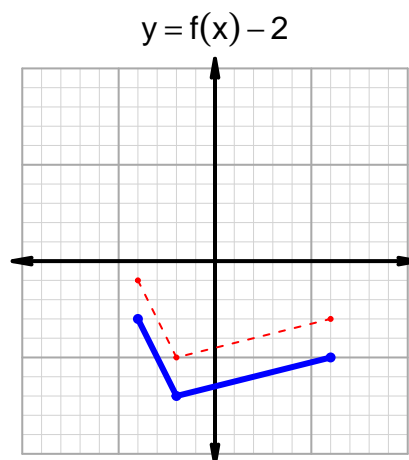
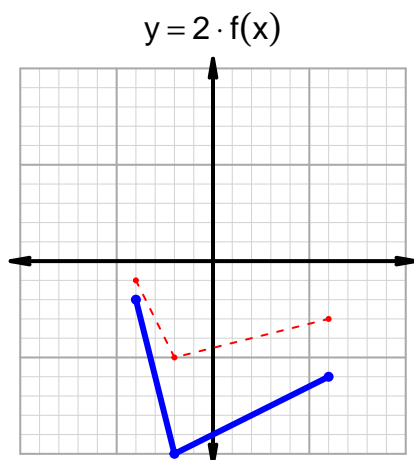


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-6, -1) \cup (5, 10)$
Negative	$(-9, -6) \cup (-1, 5)$
Increasing	$(-9, -3) \cup (3, 7)$
Decreasing	$(-3, 3) \cup (7, 10)$
Domain	$(-9, 10)$
Range	$(-6, 6)$

## Intervals, Transformations, and Slope Solution (version 17)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 22$  and  $x_2 = 62$ . Express your answer as a reduced fraction.

$x$	$g(x)$
2	22
22	58
58	62
62	2

$$\frac{f(62) - f(22)}{62 - 22} = \frac{2 - 58}{62 - 22} = \frac{-56}{40}$$

The greatest common factor of -56 and 40 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{5}$$